



Actual Wellpath Report

Cortina Unit 2H AWP Proj: 18615'

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Well	Cortina Unit 2H
Field	Doddridge	API	47-017-06890-0000
Facility	George Scott Pad	Wellbore	Cortina Unit 2H AWB
Slot	Slot #08		

REPORT SETUP INFORMATION

Projection System	NAD27 / UTM Zone 17 North, US feet	Software System	WellArchitect® 6.0
North Reference	Grid	User	Delaset
Scale	0.999607	Report Generated	11/20/2019 at 2:28:41 PM
Convergence at slot	0.17° East	Database	WA_MPL_EasternUS_Defn

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-10.71	38.55	1715843.23	14274022.52	39°18'27.1430"N	80°44'0.0580"W
Facility Reference Pt			1715804.69	14274033.23	39°18'27.2500"N	80°44'0.5480"W
Field Reference Pt			0.00	0.00	0°00'0.0000"	85°29'19.3013"W

WELLPATH DATUM

Calculation method	Minimum curvature	H&P 317 (RKB) to Facility Vertical Datum	1308.50ft
Horizontal Reference Pt	Slot	H&P 317 (RKB) to Mean Sea Level	1308.50ft
Vertical Reference Pt	H&P 317 (RKB)	H&P 317 (RKB) to Ground Level at Slot (Slot #08)	25.50ft
MD Reference Pt	H&P 317 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	342.50°

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WELLPATH DATA (219 stations) † = interpolated, ‡ = extrapolated station																
MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Comments
0.00†	0.000	215.830	0.00	0.00	0.00	0.00	1715843.23	14274022.52	39°18'27.1430"N	80°44'0.0580"W	0.00	0.000	0.00	0.00	0.00	
25.50	0.000	215.830	25.50	0.00	0.00	0.00	1715843.23	14274022.52	39°18'27.1430"N	80°44'0.0580"W	0.00	0.000	0.00	0.00	0.00	
100.00	0.050	215.830	100.00	-0.02	-0.03	-0.02	1715843.21	14274022.49	39°18'27.1428"N	80°44'0.0582"W	0.03	215.830	0.07	0.07	0.00	Gyrodata MS Gyro <17-1/2">(100'-475')
125.00	0.210	192.240	125.00	-0.07	-0.08	-0.04	1715843.19	14274022.44	39°18'27.1422"N	80°44'0.0584"W	0.09	203.713	0.66	0.64	-94.36	
150.00	0.260	205.160	150.00	-0.15	-0.18	-0.07	1715843.16	14274022.34	39°18'27.1413"N	80°44'0.0588"W	0.19	201.385	0.29	0.20	51.68	
175.00	0.290	183.900	175.00	-0.25	-0.29	-0.10	1715843.13	14274022.23	39°18'27.1401"N	80°44'0.0592"W	0.31	198.528	0.42	0.12	-85.04	
200.00	0.260	212.740	200.00	-0.34	-0.40	-0.13	1715843.10	14274022.12	39°18'27.1391"N	80°44'0.0597"W	0.42	198.250	0.56	-0.12	115.36	
225.00	0.240	202.480	225.00	-0.42	-0.50	-0.18	1715843.05	14274022.02	39°18'27.1381"N	80°44'0.0603"W	0.53	200.202	0.20	-0.08	-41.04	
250.00	0.320	200.420	250.00	-0.51	-0.61	-0.23	1715843.00	14274021.91	39°18'27.1370"N	80°44'0.0609"W	0.65	200.408	0.32	0.32	-8.24	
275.00	0.390	204.420	275.00	-0.63	-0.75	-0.29	1715842.94	14274021.77	39°18'27.1356"N	80°44'0.0616"W	0.81	200.832	0.30	0.28	16.00	
300.00	0.360	201.870	300.00	-0.76	-0.90	-0.35	1715842.88	14274021.62	39°18'27.1341"N	80°44'0.0625"W	0.97	201.230	0.14	-0.12	-10.20	
325.00	0.300	203.400	325.00	-0.87	-1.04	-0.41	1715842.82	14274021.48	39°18'27.1328"N	80°44'0.0632"W	1.11	201.403	0.24	-0.24	6.12	
350.00	0.440	211.760	350.00	-0.98	-1.18	-0.48	1715842.75	14274021.34	39°18'27.1314"N	80°44'0.0641"W	1.27	202.281	0.60	0.56	33.44	
375.00	0.510	208.900	375.00	-1.12	-1.36	-0.59	1715842.64	14274021.16	39°18'27.1296"N	80°44'0.0655"W	1.48	203.390	0.30	0.28	-11.44	
400.00	0.480	208.270	399.99	-1.27	-1.55	-0.69	1715842.54	14274020.97	39°18'27.1277"N	80°44'0.0668"W	1.70	204.052	0.12	-0.12	-2.52	
425.00	0.580	214.650	424.99	-1.42	-1.74	-0.81	1715842.42	14274020.78	39°18'27.1258"N	80°44'0.0684"W	1.92	204.975	0.46	0.40	25.52	
450.00	0.600	218.210	449.99	-1.57	-1.95	-0.97	1715842.27	14274020.57	39°18'27.1238"N	80°44'0.0703"W	2.18	206.323	0.17	0.08	14.24	
475.00	0.650	223.520	474.99	-1.71	-2.16	-1.14	1715842.09	14274020.36	39°18'27.1217"N	80°44'0.0726"W	2.44	207.940	0.31	0.20	21.24	
606.00	0.980	194.110	605.98	-3.03	-3.78	-1.93	1715841.30	14274018.74	39°18'27.1057"N	80°44'0.0826"W	4.25	207.019	0.40	0.25	-22.45	APS EM <12-1/4"> (475')(606'-2559')
699.00	3.110	177.930	698.91	-6.14	-7.07	-2.03	1715841.20	14274015.45	39°18'27.0732"N	80°44'0.0841"W	7.36	196.021	2.35	2.29	-17.40	
790.00	3.660	174.420	789.76	-11.36	-12.43	-1.66	1715841.57	14274010.09	39°18'27.0202"N	80°44'0.0795"W	12.54	187.605	0.85	0.60	-3.86	
883.00	2.870	172.270	882.60	-16.56	-17.69	-1.06	1715842.17	14274004.83	39°18'26.9682"N	80°44'0.0721"W	17.73	183.422	0.86	-0.85	-2.31	
975.00	3.810	163.280	974.45	-21.88	-22.90	0.13	1715843.36	14273999.63	39°18'26.9166"N	80°44'0.0571"W	22.90	179.672	1.17	1.02	-9.77	
1072.00	4.770	155.600	1071.17	-29.11	-29.66	2.72	1715845.95	14273992.87	39°18'26.8498"N	80°44'0.0244"W	29.79	174.752	1.15	0.99	-7.92	
1167.00	5.190	150.940	1165.82	-37.24	-37.02	6.44	1715849.67	14273985.52	39°18'26.7770"N	80°43'59.9774"W	37.57	170.126	0.61	0.44	-4.91	
1262.00	4.880	144.150	1260.45	-45.29	-44.05	10.90	1715854.12	14273978.49	39°18'26.7073"N	80°43'59.9210"W	45.38	166.105	0.71	-0.33	-7.15	
1357.00	5.010	134.920	1355.10	-52.80	-50.25	16.20	1715859.42	14273972.29	39°18'26.6459"N	80°43'59.8537"W	52.80	162.131	0.85	0.14	-9.72	
1452.00	3.470	138.870	1449.84	-59.11	-55.35	21.03	1715864.25	14273967.19	39°18'26.5954"N	80°43'59.7925"W	59.21	159.195	1.85	-1.62	4.16	
1546.00	2.120	174.560	1543.73	-63.42	-59.22	23.07	1715866.29	14273963.32	39°18'26.5570"N	80°43'59.7667"W	63.55	158.720	2.28	-1.44	37.97	
1641.00	3.580	211.540	1638.62	-67.08	-63.50	21.68	1715864.90	14273959.05	39°18'26.5148"N	80°43'59.7845"W	67.10	161.148	2.40	1.54	38.93	

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Field	Doddridge		API	47-017-06890-0000
Facility	George Scott Pad		Wellbore	Cortina Unit 2H AWB
Slot	Slot #08			

WELLPATH DATA (219 stations)																
MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Comments
1736.00	5.060	212.420	1733.34	-71.72	-69.56	17.88	1715861.11	14273952.98	39°18'26.4550"N	80°43'59.8331"W	71.83	165.583	1.56	1.56	0.93	
1831.00	5.820	208.980	1827.91	-77.74	-77.31	13.30	1715856.53	14273945.24	39°18'26.3785"N	80°43'59.8916"W	78.45	170.237	0.87	0.80	-3.62	
1926.00	5.410	233.730	1922.47	-82.49	-84.18	7.36	1715850.58	14273938.38	39°18'26.3108"N	80°43'59.9675"W	84.50	175.005	2.56	-0.43	26.05	
2021.00	5.420	232.380	2017.05	-85.48	-89.57	0.19	1715843.42	14273932.99	39°18'26.2578"N	80°44'0.0589"W	89.57	179.876	0.13	0.01	-1.42	
2115.00	4.970	231.310	2110.66	-88.48	-94.82	-6.50	1715836.73	14273927.74	39°18'26.2060"N	80°44'0.1442"W	95.04	183.922	0.49	-0.48	-1.14	
2210.00	3.720	249.330	2205.39	-90.14	-98.48	-12.60	1715830.64	14273924.08	39°18'26.1700"N	80°44'0.2219"W	99.28	187.289	1.93	-1.32	18.97	
2305.00	2.790	273.230	2300.24	-89.49	-99.44	-17.79	1715825.45	14273923.12	39°18'26.1607"N	80°44'0.2880"W	101.02	190.143	1.71	-0.98	25.16	
2400.00	2.560	265.540	2395.14	-88.19	-99.47	-22.21	1715821.03	14273923.09	39°18'26.1605"N	80°44'0.3443"W	101.92	192.588	0.45	-0.24	-8.09	
2495.00	2.420	250.300	2490.05	-87.79	-100.31	-26.22	1715817.02	14273922.24	39°18'26.1523"N	80°44'0.3952"W	103.68	194.646	0.71	-0.15	-16.04	
2559.00	2.370	242.130	2553.99	-88.08	-101.39	-28.66	1715814.58	14273921.17	39°18'26.1418"N	80°44'0.4263"W	105.36	195.783	0.54	-0.08	-12.77	
2644.00	2.350	223.150	2638.92	-89.25	-103.48	-31.40	1715811.84	14273919.08	39°18'26.1212"N	80°44'0.4613"W	108.14	196.882	0.92	-0.02	-22.33	APS EM <8-3/4">(2559)(2644'-6918')
2739.00	2.750	123.790	2733.87	-91.98	-106.17	-30.84	1715812.40	14273916.39	39°18'26.0946"N	80°44'0.4543"W	110.56	196.198	4.10	0.42	-104.59	
2834.00	6.290	94.810	2828.56	-95.74	-107.88	-23.76	1715819.48	14273914.69	39°18'26.0775"N	80°44'0.3643"W	110.46	192.421	4.32	3.73	-30.51	
2929.00	6.670	86.560	2922.96	-99.05	-107.98	-13.07	1715830.17	14273914.58	39°18'26.0761"N	80°44'0.2282"W	108.77	186.899	1.06	0.40	-8.68	
3027.00	9.000	93.320	3020.04	-103.16	-108.08	0.27	1715843.50	14273914.48	39°18'26.0747"N	80°44'0.0586"W	108.08	179.857	2.55	2.38	6.90	
3121.00	11.180	92.460	3112.58	-108.89	-108.90	16.72	1715859.94	14273913.66	39°18'26.0662"N	80°43'59.8494"W	110.18	171.273	2.32	2.32	-0.91	
3216.00	15.290	90.000	3205.04	-115.80	-109.30	38.45	1715881.67	14273913.27	39°18'26.0617"N	80°43'59.5729"W	115.86	160.617	4.37	4.33	-2.59	
3311.00	14.550	89.260	3296.84	-123.01	-109.14	62.91	1715906.12	14273913.42	39°18'26.0625"N	80°43'59.2617"W	125.98	150.040	0.80	-0.78	-0.78	
3406.00	16.170	87.550	3388.44	-129.89	-108.42	88.06	1715931.26	14273914.14	39°18'26.0688"N	80°43'58.9417"W	139.68	140.916	1.77	1.71	-1.80	
3501.00	17.940	86.570	3479.26	-136.88	-106.98	115.89	1715959.07	14273915.58	39°18'26.0823"N	80°43'58.5877"W	157.72	132.712	1.89	1.86	-1.03	
3596.00	21.760	89.120	3568.60	-145.47	-105.84	148.11	1715991.28	14273916.73	39°18'26.0927"N	80°43'58.1777"W	182.04	125.549	4.12	4.02	2.68	
3690.00	24.130	89.660	3655.16	-156.13	-105.45	184.75	1716027.91	14273917.11	39°18'26.0954"N	80°43'57.7116"W	212.73	119.717	2.53	2.52	0.57	
3785.00	24.280	89.570	3741.80	-167.59	-105.19	223.70	1716066.84	14273917.37	39°18'26.0968"N	80°43'57.2161"W	247.20	115.185	0.16	0.16	-0.09	
3880.00	24.820	89.640	3828.22	-179.20	-104.92	263.17	1716106.30	14273917.64	39°18'26.0983"N	80°43'56.7139"W	283.31	111.736	0.57	0.57	0.07	
3975.00	23.780	87.760	3914.80	-190.12	-104.05	302.25	1716145.36	14273918.52	39°18'26.1058"N	80°43'56.2168"W	319.66	108.995	1.36	-1.09	-1.98	
4070.00	22.260	85.410	4002.23	-199.18	-101.86	339.33	1716182.42	14273920.70	39°18'26.1264"N	80°43'55.7450"W	354.28	106.708	1.87	-1.60	-2.47	
4165.00	21.840	88.170	4090.29	-207.97	-99.85	374.92	1716218.01	14273922.71	39°18'26.1452"N	80°43'55.2920"W	387.99	104.913	1.18	-0.44	2.91	
4260.00	20.640	86.540	4178.83	-216.81	-98.28	409.30	1716252.37	14273924.28	39°18'26.1597"N	80°43'54.8547"W	420.93	103.502	1.41	-1.26	-1.72	
4355.00	20.600	85.930	4267.75	-224.75	-96.08	442.68	1716285.74	14273926.48	39°18'26.1804"N	80°43'54.4299"W	452.99	102.246	0.23	-0.04	-0.64	
4449.00	20.220	88.990	4355.85	-233.20	-94.62	475.42	1716318.46	14273927.94	39°18'26.1939"N	80°43'54.0134"W	484.75	101.256	1.20	-0.40	3.26	

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4544.00	21.930	88.360	4444.49	-242.71	-93.82	509.57	1716352.60	14273928.73	39°18'26.2008"N	80°43'53.5789"W	518.14	100.433	1.82	1.80	-0.66	
4639.00	22.720	85.640	4532.37	-251.73	-91.92	545.60	1716388.61	14273930.63	39°18'26.2185"N	80°43'53.1205"W	553.29	99.563	1.37	0.83	-2.86	
4734.00	22.250	85.740	4620.15	-260.02	-89.19	581.83	1716424.83	14273933.36	39°18'26.2445"N	80°43'52.6595"W	588.62	98.715	0.50	-0.49	0.11	
4829.00	22.760	87.360	4707.91	-268.85	-87.01	618.12	1716461.11	14273935.55	39°18'26.2650"N	80°43'52.1977"W	624.22	98.012	0.85	0.54	1.71	
4924.00	20.520	80.970	4796.23	-276.02	-83.55	652.93	1716495.90	14273939.01	39°18'26.2982"N	80°43'51.7547"W	658.26	97.292	3.42	-2.36	-6.73	
5021.00	18.990	82.420	4887.51	-281.24	-78.80	685.37	1716528.33	14273943.75	39°18'26.3441"N	80°43'51.3419"W	689.88	96.559	1.66	-1.58	1.49	
5116.00	18.050	87.920	4977.60	-287.82	-76.22	715.40	1716558.35	14273946.33	39°18'26.3687"N	80°43'50.9597"W	719.45	96.082	2.09	-0.99	5.79	
5211.00	18.210	87.950	5067.88	-295.69	-75.16	744.94	1716587.88	14273947.39	39°18'26.3784"N	80°43'50.5839"W	748.73	95.761	0.17	0.17	0.03	
5306.00	18.860	90.720	5157.96	-304.44	-74.82	775.13	1716618.06	14273947.73	39°18'26.3808"N	80°43'50.1998"W	778.74	95.513	1.15	0.68	2.92	
5401.00	20.900	92.260	5247.29	-314.98	-75.68	807.42	1716650.33	14273946.87	39°18'26.3713"N	80°43'49.7891"W	810.96	95.355	2.22	2.15	1.62	
5496.00	20.570	87.600	5336.15	-325.05	-75.65	841.03	1716683.93	14273946.90	39°18'26.3707"N	80°43'49.3615"W	844.43	95.140	1.77	-0.35	-4.91	
5590.00	20.220	87.870	5424.25	-333.66	-74.36	873.76	1716716.65	14273948.19	39°18'26.3825"N	80°43'48.9451"W	876.92	94.864	0.39	-0.37	0.29	
5685.00	21.730	87.590	5512.95	-342.59	-73.00	907.74	1716750.61	14273949.55	39°18'26.3949"N	80°43'48.5127"W	910.67	94.598	1.59	-0.31		
5780.00	22.490	86.240	5600.97	-351.48	-71.07	943.44	1716786.30	14273951.48	39°18'26.4129"N	80°43'48.0585"W	946.12	94.308	0.96	0.80	-1.41	
5875.00	21.880	88.270	5688.94	-360.61	-69.34	979.27	1716822.11	14273953.20	39°18'26.4289"N	80°43'47.6027"W	981.72	94.050	1.03	-0.64	2.14	
5970.00	20.740	92.230	5777.44	-371.10	-69.46	1013.77	1716856.60	14273953.08	39°18'26.4267"N	80°43'47.1637"W	1016.15	93.920	1.93	-1.20	4.17	
6065.00	21.860	91.110	5865.95	-382.42	-70.46	1048.26	1716891.08	14273952.09	39°18'26.4159"N	80°43'46.7249"W	1050.63	93.845	1.25	1.18	-1.18	
6160.00	21.220	81.720	5954.35	-390.82	-68.33	1082.97	1716925.77	14273954.22	39°18'26.4359"N	80°43'46.2833"W	1085.13	93.610	3.69	-0.67	-9.88	
6254.00	20.980	82.610	6042.04	-396.50	-63.71	1116.49	1716959.28	14273958.83	39°18'26.4805"N	80°43'45.8567"W	1118.31	93.266	0.43	-0.26	0.95	
6349.00	22.670	90.990	6130.25	-405.29	-61.84	1151.68	1716994.45	14273960.70	39°18'26.4980"N	80°43'45.4091"W	1153.34	93.074	3.73	1.78	8.82	
6412.00	23.620	83.180	6188.20	-411.48	-60.55	1176.35	1717019.12	14273961.99	39°18'26.5100"N	80°43'45.0951"W	1177.91	92.947	5.10	1.51	-12.40	
6444.00	23.790	78.550	6217.50	-413.35	-58.51	1189.05	1717031.81	14273964.03	39°18'26.5298"N	80°43'44.9335"W	1190.48	92.817	5.84	0.53	-14.47	
6539.00	20.670	62.510	6305.51	-412.46	-46.95	1222.74	1717065.48	14273975.59	39°18'26.6430"N	80°43'44.5045"W	1223.64	92.199	7.15	-3.28	-16.88	
6633.00	22.880	40.760	6392.94	-399.95	-25.41	1249.43	1717092.17	14273997.12	39°18'26.8551"N	80°43'44.1640"W	1249.69	91.165	8.85	2.35	-23.14	
6728.00	27.740	25.050	6478.89	-373.90	8.66	1270.89	1717113.62	14274031.18	39°18'27.1913"N	80°43'43.8898"W	1270.92	89.609	8.69	5.12	-16.54	
6823.00	31.030	14.980	6561.71	-336.93	52.38	1286.59	1717129.31	14274074.88	39°18'27.6230"N	80°43'43.6883"W	1287.66	87.668	6.24	3.46	-10.60	
6918.00	35.600	7.200	6641.11	-291.10	103.52	1296.40	1717139.12	14274126.00	39°18'28.1281"N	80°43'43.5616"W	1300.52	85.434	6.58	4.81	-8.19	
6963.00	38.140	3.040	6677.11	-266.18	130.40	1298.78	1717141.49	14274152.87	39°18'28.3937"N	80°43'43.5304"W	1305.31	84.267	7.91	5.64	-9.24	BH AT Curve <8-1/2">(6918')(6963'-18591')
7039.00†	40.000	358.580	6736.13	-220.72	178.27	1299.42	1717142.13	14274200.72	39°18'28.8668"N	80°43'43.5204"W	1311.59	82.188	4.43	2.45	-5.87	Middlesex: 7039' MD
7058.00	40.490	357.520	6750.63	-208.90	190.54	1299.00	1717141.71	14274212.98	39°18'28.9880"N	80°43'43.5252"W	1312.90	81.655	4.43	2.58	-5.58	

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Cortina Unit 2H AWP Proj: 18615'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Cortina Unit 2H
Field	Doddridge	API	47-017-06890-0000
Facility	George Scott Pad	Wellbore	Cortina Unit 2H AWB
Slot	Slot #08		

WELLPATH DATA (219 stations) † = interpolated, ‡ = extrapolated station																
MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Comments
7153.00	47.280	350.320	6819.10	-144.42	255.87	1291.78	1717134.50	14274278.29	39°18'29.6340"N	80°43'43.6145"W	1316.88	78.796	8.86	7.15	-7.58	
7200.00	51.010	348.230	6849.84	-109.13	290.78	1285.15	1717127.87	14274313.19	39°18'29.9792"N	80°43'43.6976"W	1317.64	77.251	8.62	7.94	-4.45	
7248.00	54.320	347.430	6878.95	-71.13	328.08	1277.10	1717119.83	14274350.47	39°18'30.3481"N	80°43'43.7986"W	1318.57	75.592	7.02	6.90	-1.67	
7251.00†	54.626	347.457	6880.69	-68.70	330.47	1276.57	1717119.30	14274352.86	39°18'30.3717"N	80°43'43.8052"W	1318.65	75.486	10.22	10.19	0.90	Burkett: 7251' MD
7295.00	59.110	347.830	6904.74	-32.01	366.45	1268.69	1717111.42	14274388.82	39°18'30.7276"N	80°43'43.9041"W	1320.55	73.889	10.22	10.19	0.85	
7307.00†	59.887	347.689	6910.83	-21.72	376.55	1266.50	1717109.23	14274398.93	39°18'30.8275"N	80°43'43.9316"W	1321.29	73.442	6.56	6.48	-1.17	Tully: 7307' MD
7343.00	62.220	347.280	6928.25	9.66	407.31	1259.67	1717102.40	14274429.66	39°18'31.1317"N	80°43'44.0173"W	1323.88	72.082	6.56	6.48	-1.14	
7390.00	65.270	345.670	6949.04	51.71	448.28	1249.81	1717092.54	14274470.62	39°18'31.5369"N	80°43'44.1412"W	1327.77	70.268	7.18	6.49	-3.43	
7438.00	68.110	344.700	6968.03	95.74	490.89	1238.53	1717081.27	14274513.22	39°18'31.9584"N	80°43'44.2830"W	1332.27	68.379	6.20	5.92	-2.02	
7466.00†	69.905	344.312	6978.06	121.86	516.08	1231.55	1717074.29	14274538.40	39°18'32.2076"N	80°43'44.3709"W	1335.31	67.264	6.54	6.41	-1.39	Marcellus POE: 7466' MD
7532.00	74.140	343.430	6998.43	184.61	576.37	1214.11	1717056.86	14274598.66	39°18'32.8040"N	80°43'44.5905"W	1343.97	64.605	6.54	6.42	-1.34	
7627.00	83.120	343.840	7017.14	277.63	665.64	1187.90	1717030.66	14274687.90	39°18'33.6871"N	80°43'44.9205"W	1361.68	60.736	9.46	9.45	0.43	
7722.00	89.450	342.930	7023.29	372.37	756.44	1160.80	1717003.57	14274778.66	39°18'34.5853"N	80°43'45.2618"W	1385.52	56.910	6.73	6.66	-0.96	
7817.00	89.510	341.680	7024.15	467.36	846.94	1131.93	1716974.71	14274869.12	39°18'35.4806"N	80°43'45.6257"W	1413.71	53.195	1.32	0.06	-1.32	
7911.00	89.660	339.600	7024.83	561.30	935.61	1100.77	1716943.57	14274957.76	39°18'36.3580"N	80°43'46.0187"W	1444.67	49.637	2.22	0.16	-2.21	
8006.00	88.980	337.850	7025.96	656.09	1024.13	1066.30	1716909.11	14275046.25	39°18'37.2339"N	80°43'46.4538"W	1478.46	46.156	1.98	-0.72	-1.84	
8101.00	89.260	338.900	7027.42	750.83	1112.43	1031.30	1716874.12	14275134.51	39°18'38.1076"N	80°43'46.8958"W	1516.93	42.833	1.14	0.29	1.11	
8195.00	89.660	341.780	7028.31	844.75	1200.94	999.68	1716842.51	14275222.98	39°18'38.9833"N	80°43'47.2947"W	1562.57	39.774	3.09	0.43	3.06	
8290.00	89.230	341.450	7029.23	939.73	1291.09	969.72	1716812.56	14275313.10	39°18'39.8752"N	80°43'47.6725"W	1614.70	36.910	0.57	-0.45	-0.35	
8385.00	89.450	339.310	7030.32	1034.65	1380.56	937.82	1716780.68	14275402.53	39°18'40.7605"N	80°43'48.0749"W	1668.97	34.189	2.26	0.23	-2.25	
8479.00	88.580	339.650	7031.94	1128.51	1468.58	904.88	1716747.75	14275490.52	39°18'41.6314"N	80°43'48.4907"W	1724.97	31.640	0.99	-0.93	0.36	
8574.00	89.020	340.200	7033.93	1223.39	1557.79	872.28	1716715.16	14275579.69	39°18'42.5141"N	80°43'48.9020"W	1785.38	29.246	0.74	0.46	0.58	
8669.00	89.320	340.720	7035.30	1318.32	1647.31	840.50	1716683.40	14275669.18	39°18'43.3998"N	80°43'49.3028"W	1849.34	27.032	0.63	0.32	0.55	
8764.00	89.380	339.200	7036.38	1413.22	1736.55	807.95	1716650.86	14275758.38	39°18'44.2828"N	80°43'49.7136"W	1915.30	24.951	1.60	0.06	-1.60	
8859.00	88.710	340.780	7037.96	1508.11	1825.80	775.45	1716618.38	14275847.59	39°18'45.1658"N	80°43'50.1237"W	1983.65	23.012	1.81	-0.71	1.66	
8954.00	89.140	344.080	7039.75	1603.08	1916.34	746.78	1716589.72	14275938.10	39°18'46.0615"N	80°43'50.4850"W	2056.70	21.291	3.50	0.45	3.47	
9048.00	89.720	346.480	7040.68	1696.96	2007.24	722.90	1716565.85	14276028.97	39°18'46.9607"N	80°43'50.7854"W	2133.45	19.806	2.63	0.62	2.55	
9143.00	90.000	346.540	7040.92	1791.72	2099.62	700.74	1716543.69	14276121.31	39°18'47.8744"N	80°43'51.0639"W	2213.47	18.456	0.30	0.29	0.06	
9238.00	89.570	343.420	7041.27	1886.62	2191.36	676.12	1716519.09	14276213.01	39°18'48.7818"N	80°43'51.3736"W	2293.30	17.147	3.32	-0.45	-3.29	
9333.00	89.290	341.380	7042.22	1981.61	2281.90	647.40	1716490.38	14276303.52	39°18'49.6776"N	80°43'51.7356"W	2371.96	15.839	2.17	-0.29	-2.15	

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Cortina Unit 2H AWP Proj: 18615'

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Well	Cortina Unit 2H
Field	Doddridge	API	47-017-06890-0000
Facility	George Scott Pad	Wellbore	Cortina Unit 2H AWB
Slot	Slot #08		

WELLPATH DATA (219 stations)

MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Comments
9428.00	89.450	343.140	7043.26	2076.60	2372.38	618.46	1716461.44	14276393.96	39°18'50.5727"N	80°43'52.1004"W	2451.67	14.611	1.86	0.17	1.85	
9522.00	89.420	345.220	7044.19	2170.55	2462.81	592.84	1716435.83	14276484.35	39°18'51.4672"N	80°43'52.4230"W	2533.16	13.534	2.21	-0.03	2.21	
9617.00	89.570	345.530	7045.03	2265.43	2554.73	568.85	1716411.85	14276576.24	39°18'52.3764"N	80°43'52.7247"W	2617.29	12.553	0.36	0.16	0.33	
9712.00	89.570	344.810	7045.74	2360.32	2646.56	544.53	1716387.55	14276668.03	39°18'53.2847"N	80°43'53.0306"W	2702.00	11.626	0.76	0.00	-0.76	
9807.00	88.980	341.340	7046.94	2455.30	2737.42	616.89	1716359.91	14276758.86	39°18'54.1836"N	80°43'53.3789"W	2785.79	10.693	3.70	-0.62	-3.65	
9902.00	89.780	345.780	7047.97	2550.25	2828.51	490.01	1716333.04	14276849.91	39°18'55.0847"N	80°43'53.7174"W	2870.64	9.828	4.75	0.84	4.67	
9995.00	89.290	346.380	7048.72	2643.06	2918.77	467.64	1716310.68	14276940.14	39°18'55.9775"N	80°43'53.9987"W	2956.00	9.102	0.83	-0.53	0.65	
10090.00	89.570	347.440	7049.67	2737.78	3011.30	446.12	1716289.18	14277032.63	39°18'56.8926"N	80°43'54.2689"W	3044.17	8.427	1.15	0.29	1.12	
10185.00	89.540	347.230	7050.41	2832.44	3103.99	425.29	1716268.36	14277125.28	39°18'57.8093"N	80°43'54.5304"W	3132.99	7.802	0.22	-0.03	-0.22	
10280.00	89.510	345.380	7051.19	2927.22	3196.27	402.79	1716245.86	14277217.53	39°18'58.7221"N	80°43'54.8133"W	3221.55	7.182	1.97	-0.03	-1.97	
10375.00	89.450	344.450	7052.06	3022.13	3287.99	378.05	1716221.13	14277309.21	39°18'59.6293"N	80°43'55.1246"W	3309.65	6.559	0.96	-0.06	-0.96	
10470.00	89.480	344.440	7052.94	3117.07	3379.51	352.57	1716195.67	14277400.69	39°19'0.5346"N	80°43'55.4452"W	3397.85	5.956	0.03	0.03	-0.01	
10564.00	89.510	342.200	7053.77	3211.05	3469.54	325.60	1716168.70	14277490.69	39°19'1.4252"N	80°43'55.7851"W	3484.79	5.361	2.38	0.03	-2.38	
10659.00	89.480	340.170	7054.61	3306.02	3559.46	294.96	1716138.07	14277580.57	39°19'2.3148"N	80°43'56.1715"W	3571.66	4.737	2.14	-0.03	-2.14	
10753.00	89.480	339.720	7055.46	3399.92	3647.75	262.73	1716105.85	14277668.83	39°19'3.1884"N	80°43'56.5783"W	3657.20	4.120	0.48	0.00	-0.48	
10848.00	89.540	340.760	7056.28	3494.84	3737.16	230.61	1716073.75	14277758.20	39°19'4.0730"N	80°43'56.9836"W	3744.26	3.531	1.10	0.06	1.09	
10943.00	89.540	342.480	7057.04	3589.83	3827.30	200.66	1716043.81	14277848.31	39°19'4.9649"N	80°43'57.3613"W	3832.56	3.001	1.81	0.00	1.81	
11037.00	89.660	341.050	7057.69	3683.81	3916.58	171.25	1716014.41	14277937.55	39°19'5.8481"N	80°43'57.7321"W	3920.32	2.504	1.53	0.13	-1.52	
11132.00	89.660	337.170	7058.26	3778.63	4005.32	137.38	1715980.55	14278026.25	39°19'6.7261"N	80°43'58.1597"W	4007.67	1.964	4.08	0.00	-4.08	
11227.00	89.660	338.150	7058.82	3873.29	4093.18	101.27	1715944.46	14278114.08	39°19'7.5956"N	80°43'58.6159"W	4094.44	1.417	1.03	0.00	1.03	
11322.00	89.750	340.190	7059.31	3968.12	4181.97	67.49	1715910.69	14278202.83	39°19'8.4741"N	80°43'59.0423"W	4182.51	0.925	2.15	0.09	2.15	
11417.00	89.910	343.820	7059.59	4063.10	4272.30	38.15	1715881.36	14278293.14	39°19'9.3678"N	80°43'59.4123"W	4272.48	0.512	3.82	0.17	3.82	
11512.00	89.850	348.130	7059.79	4157.90	4364.45	15.13	1715858.35	14278385.24	39°19'10.2792"N	80°43'59.7017"W	4364.48	0.199	4.54	-0.06	4.54	
11606.00	90.340	351.380	7059.64	4251.14	4456.94	-1.59	1715841.64	14278477.70	39°19'11.1938"N	80°43'59.9109"W	4456.94	359.980	3.50	0.52	3.46	
11701.00	90.150	349.410	7059.23	4345.23	4550.60	-17.44	1715825.80	14278571.32	39°19'12.1200"N	80°44'0.1091"W	4550.64	359.780	2.08	-0.20	-2.07	
11796.00	90.890	345.480	7058.37	4439.85	4643.31	-38.08	1715805.16	14278663.99	39°19'13.0369"N	80°44'0.3683"W	4643.46	359.530	4.21	0.78	-4.14	
11891.00	89.750	345.600	7057.84	4534.72	4735.30	-61.80	1715781.45	14278755.94	39°19'13.9468"N	80°44'0.6667"W	4735.70	359.252	1.21	-1.20	0.13	
11986.00	91.140	344.800	7057.10	4629.60	4827.14	-86.07	1715757.19	14278847.75	39°19'14.8552"N	80°44'0.9720"W	4827.91	358.979	1.69	1.46	-0.84	
12080.00	89.570	337.490	7056.52	4723.51	4916.03	-116.43	1715726.85	14278936.60	39°19'15.7347"N	80°44'1.3549"W	4917.41	358.643	7.95	-1.67	-7.78	
12175.00	89.780	335.650	7057.06	4818.00	5003.19	-154.20	1715689.09	14279023.73	39°19'16.5972"N	80°44'1.8323"W	5005.57	358.235	1.95	0.22	-1.94	

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Field	Doddridge	API	47-017-06890-0000
Facility	George Scott Pad	Wellbore	Cortina Unit 2H AWB
Slot	Slot #08		

WELLPATH DATA (219 stations)																
MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Comments
12270.00	89.970	335.910	7057.26	4912.34	5089.83	-193.17	1715650.13	14279110.34	39°19'17.4547"N	80°44'2.3249"W	5093.49	357.827	0.34	0.20	0.27	
12365.00	90.000	337.000	7057.29	5006.81	5176.92	-231.12	1715612.20	14279197.39	39°19'18.3165"N	80°44'2.8046"W	5182.07	357.444	1.15	0.03	1.15	
12460.00	90.000	337.340	7057.29	5101.40	5264.48	-267.98	1715575.36	14279284.91	39°19'19.1830"N	80°44'3.2703"W	5271.29	357.086	0.36	0.00	0.36	
12555.00	89.720	338.500	7057.52	5196.10	5352.51	-303.69	1715539.66	14279372.91	39°19'20.0541"N	80°44'3.7214"W	5361.11	356.753	1.26	-0.29	1.22	
12649.00	89.630	341.090	7058.05	5289.98	5440.71	-336.15	1715507.21	14279461.08	39°19'20.9268"N	80°44'4.1312"W	5451.09	356.464	2.76	-0.10	2.76	
12744.00	89.660	341.520	7058.64	5384.96	5530.70	-366.60	1715476.77	14279551.03	39°19'21.8171"N	80°44'4.5152"W	5542.84	356.208	0.45	0.03	0.45	
12839.00	90.280	345.000	7058.69	5479.94	5621.66	-393.96	1715449.43	14279641.95	39°19'22.7169"N	80°44'4.8600"W	5635.45	355.991	3.72	0.65	3.66	
12934.00	90.650	345.370	7057.92	5574.83	5713.50	-418.25	1715425.14	14279733.76	39°19'23.6253"N	80°44'5.1656"W	5728.79	355.813	0.55	0.39	0.39	
13029.00	90.770	343.690	7056.74	5669.76	5805.04	-443.59	1715399.82	14279825.27	39°19'24.5309"N	80°44'5.4846"W	5821.97	355.630	1.77	0.13	-1.77	
13124.00	90.370	341.990	7055.80	5764.75	5895.81	-471.61	1715371.80	14279916.00	39°19'25.4287"N	80°44'5.8379"W	5914.64	355.427	1.84	-0.42	-1.79	
13219.00	90.400	342.070	7055.16	5859.74	5986.17	-500.92	1715342.50	14280006.32	39°19'26.3227"N	80°44'6.2074"W	6007.09	355.217	0.09	0.03	0.08	
13314.00	90.120	340.170	7054.73	5954.71	6076.05	-531.66	1715311.78	14280096.17	39°19'27.2120"N	80°44'6.5952"W	6099.27	354.999	2.02	-0.29	-2.00	
13409.00	90.430	338.020	7054.27	6049.54	6164.80	-565.56	1715277.90	14280184.88	39°19'28.0900"N	80°44'7.0232"W	6190.68	354.758	2.29	0.33	-2.26	
13503.00	90.150	338.430	7053.80	6143.27	6252.09	-600.43	1715243.04	14280272.13	39°19'28.9536"N	80°44'7.4637"W	6280.85	354.514	0.53	-0.30	0.44	
13598.00	89.690	341.440	7053.93	6238.17	6341.31	-633.02	1715210.46	14280361.32	39°19'29.8366"N	80°44'7.8751"W	6372.83	354.299	3.21	-0.48	3.17	
13693.00	89.820	343.950	7054.34	6333.16	6432.00	-661.27	1715182.22	14280451.98	39°19'30.7338"N	80°44'8.2312"W	6465.90	354.130	2.65	0.14	2.64	
13788.00	89.940	342.390	7054.53	6428.15	6522.93	-688.78	1715154.72	14280542.87	39°19'31.6333"N	80°44'8.5778"W	6559.19	353.972	1.65	0.13	-1.64	
13882.00	90.120	343.400	7054.49	6522.14	6612.77	-716.42	1715127.09	14280632.68	39°19'32.5220"N	80°44'8.9263"W	6651.47	353.817	1.09	0.19	1.07	
13977.00	90.340	342.970	7054.10	6617.14	6703.71	-743.91	1715099.62	14280723.58	39°19'33.4216"N	80°44'9.2726"W	6744.86	353.668	0.51	0.23	-0.45	
14072.00	89.720	340.750	7054.05	6712.12	6793.98	-773.48	1715070.05	14280813.81	39°19'34.3147"N	80°44'9.6456"W	6837.87	353.505	2.43	-0.65	-2.34	
14166.00	89.510	341.310	7054.69	6806.09	6882.87	-804.04	1715039.51	14280902.67	39°19'35.1941"N	80°44'10.0311"W	6929.68	353.337	0.64	-0.22	0.60	
14261.00	89.600	344.050	7055.42	6901.08	6973.55	-832.32	1715011.24	14280993.32	39°19'36.0912"N	80°44'10.3876"W	7023.05	353.194	2.89	0.09	2.88	
14356.00	89.880	348.350	7055.86	6995.86	7065.79	-854.97	1714988.60	14281085.51	39°19'37.0035"N	80°44'10.6725"W	7117.33	353.101	4.54	0.29	4.53	
14451.00	89.880	349.710	7056.05	7090.24	7159.05	-873.05	1714970.53	14281178.74	39°19'37.9257"N	80°44'10.8991"W	7212.09	353.047	1.43	0.00	1.43	
14546.00	89.600	349.580	7056.49	7184.50	7252.50	-890.12	1714953.46	14281272.15	39°19'38.8499"N	80°44'11.1129"W	7306.92	353.003	0.32	-0.29	-0.14	
14641.00	89.630	346.130	7057.12	7279.07	7345.36	-910.11	1714933.48	14281364.97	39°19'39.7682"N	80°44'11.3638"W	7401.53	352.937	3.63	0.03	-3.63	
14736.00	89.600	346.070	7057.76	7373.88	7437.58	-932.93	1714910.67	14281457.15	39°19'40.6803"N	80°44'11.6507"W	7495.86	352.850	0.07	-0.03	-0.06	
14830.00	89.510	344.140	7058.49	7467.77	7528.41	-957.09	1714886.52	14281547.95	39°19'41.5788"N	80°44'11.9548"W	7589.00	352.755	2.06	-0.10	-2.05	
14925.00	89.720	344.890	7059.13	7562.71	7619.96	-982.45	1714861.17	14281639.46	39°19'42.4843"N	80°44'12.2742"W	7683.03	352.653	0.82	0.22	0.79	
15020.00	89.510	342.140	7059.77	7657.89	7711.04	-1009.41	1714834.22	14281730.51	39°19'43.3854"N	80°44'12.6138"W	7776.83	352.542	2.90	-0.22	-2.89	

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Well	Cortina Unit 2H
Field	Doddridge	API	47-017-06890-0000
Facility	George Scott Pad	Wellbore	Cortina Unit 2H AWB
Slot	Slot #08		

WELLPATH DATA (219 stations)

MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Comments
15115.00	90.120	342.690	7060.08	7752.69	7801.60	-1038.11	1714805.53	14281821.04	39°19'44.2812"N	80°44'12.9757"W	7870.37	352.421	0.86	0.64	0.58	
15210.00	89.660	340.150	7060.26	7847.66	7891.64	-1068.38	1714775.28	14281911.04	39°19'45.1720"N	80°44'13.3575"W	7963.63	352.290	2.72	-0.48	-2.67	
15304.00	89.350	335.070	7061.07	7941.28	7978.52	-1104.17	1714739.50	14281997.89	39°19'46.0318"N	80°44'13.8098"W	8054.57	352.121	5.41	-0.33	-5.40	
15399.00	90.280	334.470	7061.38	8035.42	8064.46	-1144.66	1714699.02	14282083.79	39°19'46.8823"N	80°44'14.3219"W	8145.29	351.921	1.16	0.98	-0.63	
15494.00	89.720	335.780	7061.38	8129.63	8150.64	-1184.62	1714659.08	14282169.94	39°19'47.7352"N	80°44'14.8273"W	8236.28	351.730	1.50	-0.59	1.38	
15589.00	91.320	336.540	7060.52	8224.04	8237.53	-1223.01	1714620.70	14282256.79	39°19'48.5951"N	80°44'15.3126"W	8327.83	351.555	1.86	1.68	0.80	
15684.00	91.380	336.350	7058.28	8318.49	8324.59	-1260.97	1714582.76	14282343.82	39°19'49.4567"N	80°44'15.7924"W	8419.55	351.387	0.21	0.06	-0.20	
15778.00	89.480	344.160	7057.57	8412.33	8412.99	-1292.70	1714551.04	14282432.18	39°19'50.3313"N	80°44'16.1929"W	8511.73	351.265	8.55	-2.02	8.31	
15873.00	90.000	349.180	7058.00	8507.05	8505.40	-1314.59	1714529.16	14282524.56	39°19'51.2452"N	80°44'16.4682"W	8606.39	351.214	5.31	0.55	5.28	
15968.00	89.260	349.810	7058.62	8601.34	8598.80	-1331.91	1714511.84	14282617.92	39°19'52.1689"N	80°44'16.6851"W	8701.35	351.195	1.02	-0.78	0.66	
16063.00	89.290	344.760	7059.82	8695.97	8691.44	-1352.81	1714490.95	14282710.52	39°19'53.0851"N	80°44'16.9477"W	8796.09	351.153	5.32	0.03	-5.32	
16157.00	89.140	343.250	7061.11	8789.93	8781.79	-1378.71	1714465.06	14282800.83	39°19'53.9788"N	80°44'17.2740"W	8889.36	351.078	1.61	-0.16	-1.61	
16252.00	89.170	342.160	7062.51	8884.91	8872.48	-1406.95	1714436.83	14282891.49	39°19'54.8760"N	80°44'17.6300"W	8983.34	350.989	1.15	0.03	-1.15	
16347.00	89.020	342.440	7064.01	8979.90	8962.97	-1435.83	1714407.97	14282981.95	39°19'55.7712"N	80°44'17.9942"W	9077.25	350.899	0.33	-0.16	0.29	
16442.00	88.950	342.970	7065.69	9074.89	9053.66	-1464.07	1714379.74	14283072.60	39°19'56.6683"N	80°44'18.3502"W	9171.28	350.814	0.56	-0.07	0.56	
16537.00	89.320	344.980	7067.13	9169.84	9144.96	-1490.29	1714353.53	14283163.86	39°19'57.5714"N	80°44'18.6805"W	9265.59	350.744	2.15	0.39	2.12	
16632.00	89.050	345.780	7068.48	9264.71	9236.87	-1514.27	1714329.56	14283255.74	39°19'58.4805"N	80°44'18.9823"W	9360.17	350.690	0.89	-0.28	0.84	
16726.00	88.950	343.990	7070.12	9358.61	9327.60	-1538.77	1714305.06	14283346.43	39°19'59.3780"N	80°44'19.2908"W	9453.67	350.632	1.91	-0.11	-1.90	
16821.00	88.980	342.070	7071.83	9453.58	9418.44	-1566.50	1714277.35	14283437.24	39°20'0.2766"N	80°44'19.6403"W	9547.83	350.557	2.02	0.03	-2.02	
16916.00	88.950	341.110	7073.55	9548.56	9508.57	-1596.49	1714247.37	14283527.33	39°20'1.1682"N	80°44'20.0187"W	9641.66	350.469	1.01	-0.03	-1.01	
17011.00	89.320	341.540	7074.98	9643.52	9598.55	-1626.91	1714216.97	14283617.28	39°20'2.0585"N	80°44'20.4025"W	9735.45	350.380	0.60	0.39	0.45	
17106.00	89.290	339.330	7076.14	9738.45	9688.06	-1658.72	1714185.17	14283706.75	39°20'2.9440"N	80°44'20.8040"W	9829.03	350.284	2.33	-0.03	-2.33	
17200.00	89.260	339.590	7077.33	9832.31	9776.07	-1691.70	1714152.20	14283794.73	39°20'3.8149"N	80°44'21.2205"W	9921.36	350.183	0.28	-0.03	0.28	
17295.00	89.350	338.900	7078.48	9927.15	9864.90	-1725.36	1714118.55	14283883.52	39°20'4.6938"N	80°44'21.6456"W	10014.65	350.079	0.73	0.09	-0.73	
17390.00	89.660	341.620	7079.30	10022.06	9954.31	-1757.44	1714086.48	14283972.89	39°20'5.5783"N	80°44'22.0507"W	10108.26	349.988	2.88	0.33	2.86	
17485.00	89.450	346.800	7080.04	10116.99	10045.69	-1783.28	1714060.65	14284064.24	39°20'6.4822"N	80°44'22.3762"W	10202.74	349.934	5.46	-0.22	5.45	
17580.00	89.320	345.790	7081.06	10211.77	10137.98	-1805.79	1714038.16	14284156.49	39°20'7.3950"N	80°44'22.6592"W	10297.55	349.900	1.07	-0.14	-1.06	
17675.00	89.080	346.220	7082.38	10306.58	10230.15	-1828.76	1714015.19	14284248.62	39°20'8.3067"N	80°44'22.9482"W	10392.32	349.865	0.52	-0.25	0.45	
17770.00	89.140	345.590	7083.86	10401.40	10322.28	-1851.89	1713992.07	14284340.71	39°20'9.2179"N	80°44'23.2392"W	10487.08	349.829	0.67	0.06	-0.66	
17864.00	89.570	345.790	7084.92	10495.25	10413.35	-1875.12	1713968.85	14284431.76	39°20'10.1187"N	80°44'23.5316"W	10580.83	349.792	0.50	0.46	0.21	

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Cortina Unit 2H AWP Proj: 18615'

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Well	Cortina Unit 2H
Field	Doddridge	API	47-017-06890-0000
Facility	George Scott Pad	Wellbore	Cortina Unit 2H AWB
Slot	Slot #08		

WELLPATH DATA (219 stations) † = interpolated, ‡ = extrapolated station

MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS ("/100ft)	Build Rate ("/100ft)	Turn Rate ("/100ft)	Comments
17959.00	89.140	347.650	7085.99	10589.99	10505.80	-1896.94	1713947.04	14284524.17	39°20'11.0331"N	80°44'23.8059"W	10675.69	349.765	2.01	-0.45	1.95	
18054.00	89.200	347.680	7087.36	10684.59	10598.60	-1917.24	1713926.75	14284616.93	39°20'11.9508"N	80°44'24.0608"W	10770.61	349.746	0.07	0.06	0.03	
18149.00	89.230	347.770	7088.66	10779.19	10691.42	-1937.43	1713906.56	14284709.71	39°20'12.8688"N	80°44'24.3144"W	10865.55	349.729	0.10	0.03	0.03	
18244.00	88.860	347.950	7090.25	10873.76	10784.28	-1957.41	1713886.60	14284802.54	39°20'13.7872"N	80°44'24.5652"W	10960.48	349.712	0.43	-0.39	0.19	
18339.00	88.770	345.450	7092.21	10968.47	10876.71	-1979.26	1713864.76	14284894.93	39°20'14.7013"N	80°44'24.8399"W	11055.33	349.687	2.63	-0.09	-2.63	
18433.00	89.140	344.520	7093.93	11062.37	10967.48	-2003.61	1713840.42	14284985.66	39°20'15.5991"N	80°44'25.1465"W	11148.99	349.647	1.06	0.39	-0.99	
18528.00	88.770	345.060	7095.66	11157.28	11059.14	-2028.52	1713815.51	14285077.28	39°20'16.5057"N	80°44'25.4603"W	11243.64	349.606	0.69	-0.39	0.57	
18591.00	88.650	346.000	7097.08	11220.17	11120.12	-2044.26	1713799.78	14285138.25	39°20'17.1090"N	80°44'25.6583"W	11306.47	349.583	1.50	-0.19	1.49	
18615.00‡	88.650	346.000	7097.64	11244.12	11143.40	-2050.07	1713793.97	14285161.52	39°20'17.3392"N	80°44'25.7314"W	11330.41	349.576	0.00	0.00	0.00	Projected MD at TD: 18615'

HOLE & CASING SECTIONS - Ref Wellbore: Cortina Unit 2H AWB Ref Wellpath: Cortina Unit 2H AWP Proj: 18615'

String/Diameter	Start MD (ft)	End MD (ft)	Interval (ft)	Start TVD (ft)	End TVD (ft)	Start N/S (ft)	Start E/W (ft)	End N/S (ft)	End E/W (ft)
20in Conductor	25.50	105.50	80.00	25.50	105.50	0.00	0.00	-0.03	-0.02
17.5in Open Hole	105.50	560.50	455.00	105.50	560.48	-0.03	-0.02	-3.09	-1.71
13.375in Casing Surface	25.50	560.50	535.00	25.50	560.48	0.00	0.00	-3.09	-1.71
12.25in Open Hole	560.50	2630.00	2069.50	560.48	2624.93	-3.09	-1.71	-103.08	-31.00
9.625in Casing Intermediate	25.50	2610.70	2585.20	25.50	2605.65	0.00	0.00	-102.55	-30.41
8.75in Open Hole	2630.00	6982.00	4352.00	2624.93	6692.01	-103.08	-31.00	142.18	1299.28
8.5in Open Hole	6982.00	18615.00	11633.00	6692.01	7097.64	142.18	1299.28	11143.40	-2050.07
5.5in Casing Production	25.50	18615.00	18589.50	25.50	7097.64	0.00	0.00	11143.40	-2050.07

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Cortina Unit 2H
Field	Doddridge	API	47-017-06890-0000
Facility	George Scott Pad	Wellbore	Cortina Unit 2H AWB
Slot	Slot #08		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Cortina Unit 2H - POE - Rev-2	6971.00	439.66	1257.27	1717100.00	14274462.00	39°18'31.4515"N	80°43'44.0466"W	point
Cortina Unit 2H - BHL - Rev-2	7017.00	11170.08	-2125.56	1713718.51	14285188.18	39°20'17.6050"N	80°44'26.6912"W	point
Cortina Unit 2H - LP - Rev-2	7017.00	680.50	1181.34	1717024.11	14274702.75	39°18'33.8342"N	80°43'45.0034"W	point

WELLPATH COMPOSITION - Ref Wellbore: Cortina Unit 2H AWB Ref Wellpath: Cortina Unit 2H AWP Proj: 18615'					
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	Survey Date
25.50	475.00	Gyrodata 2015 - GC+WIR+DPIPE	01 Gyrodata MS Gyro <17-1/2">(100'-475')	Cortina Unit 2H AWB	
475.00	2559.00	BH NaviTrak (Axial)	02 APS EM <12-1/4"> (475')(606'-2559')	Cortina Unit 2H AWB	
2559.00	6918.00	BH NaviTrak (Axial)	03 APS EM <8-3/4">(2559')(2644'-6918')	Cortina Unit 2H AWB	
6918.00	18615.00	BH AutoTrak Curve (Short)	04 BH AT Curve <8-1/2">(6918')(6963'-18591')	Cortina Unit 2H AWB	

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Field	Doddridge	API	47-017-06890-0000
Facility	George Scott Pad	Wellbore	Cortina Unit 2H AWB
Slot	Slot #08		

COMMENTS

Wellpath general comments
API: 47-017-06890-0000
BHI Job #: 110072950B
Rig: H&P 317
Duration: 10/08/2019-11/16/2019
Gyrodata MS Gyro <17-1/2">(100'-475')
APS EM <12-1/4"> (475')(606'-2559')
APS EM <8-3/4">(2559')(2644'-6918')
BH AT Curve <8-1/2">(6918')(6963'-18591')
Middlesex: 7039' MD
Burkett: 7251' MD
Tully: 7307' MD
Marcellus POE: 7466' MD
Projected MD at TD: 18615'

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